

CLAIMS

What is claimed is:

[Claim 1] A vehicular infrared light radiating lamp including a light source unit comprising: a reflector, a light source mounted on said reflector, a tubular lens holder, a convex lens mounted via said tubular lens holder forward of said reflector, an infrared light transmitting film provided in and traversing a light path between said reflector and said convex lens, an infrared light transmitting film-free region being provided on an outer periphery of said infrared light transmitting film such that visible light from said light source is emitted from a rim portion of said convex lens, and a light shielding member provided on said lens holder and disposed to the rear of said rim portion of said convex lens for blocking light in a direct path between said light source and reflector and said infrared light transmitting film-free region while allowing other visible light to enter said infrared light transmitting film-free region.

[Claim 2] The vehicular infrared light radiating lamp according to claim 1, wherein said infrared light transmitting film is formed on a rear surface of said convex lens.

[Claim 3] The vehicular infrared light radiating lamp according to claim 1, further comprising a transparent plate disposed to the rear of and parallel to a rear surface of said convex lens, said infrared light transmitting film being formed on said transparent plate.

[Claim 4] The vehicular infrared light radiating lamp according to claim 3, wherein said transparent plate is disposed between said rear surface of said convex lens and said light shielding member.

[Claim 5] The vehicular infrared light radiating lamp according to claim 4, wherein said transparent plate is spaced from said rear surface of said convex lens.

[Claim 6] The vehicular infrared light radiating lamp according to claim 3, wherein said transparent plate is disposed between rearward of said light shielding member and spaced from said light shielding member.

[Claim 7] The vehicular infrared light radiating lamp according to claim 1, wherein said light shielding member extends in a stepped configuration on an inner side of a lens engaging portion on a front edge portion of said lens holder.

[Claim 8] The vehicular infrared light radiating lamp according to claim 1, wherein a radially inward end portion of said light shielding member has a tapered shape.

[Claim 9] The vehicular infrared light radiating lamp according to claim 8, wherein said radially inward end portion of said light shielding member is non-reflective.

[Claim 10] The vehicular infrared light radiating lamp according to claim 5, wherein said radially inward end portion of said light shielding member is treated with a blackening treatment.

[Claim 11] The vehicular infrared light radiating lamp according to claim 1, wherein step portions for mounting said convex lens are formed at a plurality of locations substantially equally spaced in a circumferential direction on a lens engaging portion on a front edge of the lens holder, said step portions being notched in an arc shape with tapered inner peripheral surfaces diametrically expanding forward.

[Claim 12] The vehicular infrared light radiating lamp according to claim 1, wherein said other light comprises light reflected from said infrared light transmitting film.

[Claim 13] The vehicular infrared light radiating lamp according to claim 1, wherein said infrared light transmitting film passes at least some non-red visible light.

[Claim 14] A vehicular infrared light radiating lamp including a light source unit comprising: a reflector, a light source mounted on said reflector, a tubular lens holder, a convex lens mounted via said tubular lens holder forward of said reflector, an infrared light transmitting film provided in and traversing a light path between said reflector and said convex lens, an infrared light transmitting film-free region being provided on an outer periphery of said infrared light transmitting film such that visible light from said light source is emitted from a rim portion of said convex lens, and means for blocking light in a direct path between said light source and reflector and said infrared light transmitting film-free region while allowing other visible light to enter said infrared light transmitting film-free region.

[Claim 15] A vehicular infrared light radiating lamp including a light source unit comprising: a reflector, a light source mounted on said reflector, a tubular lens holder, a convex lens mounted via said tubular lens holder forward of said reflector, an infrared light transmitting film provided in and traversing a light path between said reflector and said convex lens, an infrared light transmitting film-free region being provided on an outer periphery of said infrared light transmitting film, and means for directing visible light through said outer periphery of said light transmitting film in an amount sufficiently great to dilute red light emitted from said convex lens such that said lamp is not viewed as emitting red light and sufficient small as to not cause glare.